A REVISION OF THE NORTH AMERICAN GENUS EREMOMYIOIDES MALLOCH (DIPTERA, MUSCIDÆ)

By H. C. Huckett
Riverhead, N. Y.

The native genus *Eremomyioides* was established by Malloch[1] for the reception of three species, *Pegomyia setosa* Stein, *Eremomyia cylindrica* Stein and a new form *Eremomyioides parkeri.* The second species, *cylindrica,* was chosen as the genotype. Later Malloch[2, 3] recorded two new species belonging to the genus, *E. fuscipes* and *E. similis,* and published a key to the known forms. There is now before me a sixth species which has not been recognized, and also the male of *parkeri.*

The distinguishing characters of *Eremomyioides* are well marked and distinctive. All the species possess setulæ on all pleural and sternal sclerites of thorax, including propleura, pteropleura, hypopleura, prosternum and metasternum. In addition, all species lack cruciate setæ on interfrontalia; they possess a bristle near middle of anteroventral surface of middle femora and middle tibiæ, and bear numerous stout short setulæ on vibrissal angle. In the male the structure of hypopygium and copulatory appendages is typical of all species, being more robust in *parkeri* and *setosa.* The prebasal sclerite of hypopygium (tegrum 6 of Crampton)[4] has numerous bristles. The females have two or more of the fore tarsal segments broadened. The genus in my opinion finds its closest relationships in the *major*-group of the genus *Pegomyia,*[5] and in *Eremomyia* as delimited by Ringdahl.[6]

[1] Malloch, J. R. 1918. Notes and descriptions of some anthomyid genera. Proc. Biol. Soc. Wash., 31: 67–68.

[2] Malloch, J. R. 1920. Descriptions of new North American Anthomyiidæ (Diptera). Trans. Amer. Ent. Soc., 46: 182–183.

[3] Malloch, J. R. 1921. Synopses of some North American Anthomyiinæ (Diptera). Can. Ent., 53: 76–77.

[4] Crampton, G. C. 1941. The terminal abdominal structures of male *Diptera.* Psyche, 48: 94, fig. 20.

[5] Huckett, H. C. 1941. A revision of the North American species belong-

The adults of the species are commonly collected in the Spring in the neighborhood of woodland terrain. From available information it would seem that the species *cylindrica* is widely distributed across the continent from Alaska to Quebec. A single specimen of *similis* has been taken at Boulder, Colorado, and of *fuscipes* in the foothills of the Appalachian Mountains in Georgia.

Genus *Eremomyioides* Malloch

Eremomyioides Malloch, 1918, Proc. Biol. Soc. Wash., 31: 67. Curran, 1934, Fam. Gen. N. A. Dipt., p. 391. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.

Eremomyoides Malloch, 1921, Can. Ent., 53: 76. Huckett, 1924, N. Y. (Cornell) Agr. Exp. Sta., Mem. 77 (1923), p. 12.

Genotype: *Eremomyia cylindrica* Stein.

KEYS TO SPECIES

Males

1. Eyes separated at narrowest by a distance greater than twice that between posterior ocelli inclusive; parafrontals bristled to vertex, vertical and paraorbital bristles robust; hypopygium prominently protruded caudad, anal sclerite (tergum 9) longer than length of process on fifth abdominal sternum 2

   Eyes separated at narrowest by a distance not greater than twice that between posterior ocelli inclusive; parafrontals bare caudad, verticals slender, paraorbital bristles lacking; hypopygium inconspicuous, not protruding caudad, anal sclerite not longer than process of fifth abdominal sternum 3

2. Hind femur with long, stiff bristles on proximal region of antero- and posteroventral surfaces which are directed apicad, stouter than those on distal half of anteroventral surface ..... *parkeri* Mall.

   Hind femur with bristles on proximal region of antero- and posteroventral surfaces directed ventrad and not stouter than those on distal half of anteroventral surface ..... *setosa* (Stein)

3. Eyes separated by a distance not greater than that between posterior ocelli inclusive; bristles of middle pair of presutural acrosticals separated by a distance greater than that between eyes; hind tibia largely reddish yellow, apical anterior bristle weak ..... *cylindrica* (Stein)

---

ing to the genus Pegomyia. (Diptera: Muscidæ) Mem. Amer. Ent. Soc., No. 10, p. 14.

[6] Ringdahl, O. 1933. Översikt av i Sverige funna Hylemyia-arter. Ent. Tidskr., Årg. 54, häft 1, p. 30.

Eyes separated by a distance greater than that between posterior ocelli inclusive; bristles of middle pair of presutural acrosticals separated by a distance less than that between eyes 4

4. Hind tibia with 3 or 4 anterodorsal and 3 or 4 posterodorsal bristles. *conscripta* n. sp.

Hind tibia with fewer bristles on one or other of dorsal surfaces, usually with 2 anterodorsal and 2 posterodorsal bristles 5

5. Costal setulæ scarcely as long as width of costa, serially conforming to costal hairs; thorax with 3 pairs of presutural acrostical bristles; inner margin of second antennal segment extending obliquely across base of third segment and angularly projected on the lower half ...*fuscipes* Mall.

Costal setulæ proximad of costal thorn slightly longer than width of costa, more widely spaced apart than costal hairs; thorax with two pairs of presutural acrosticals; inner margin of second antennal segment extending transversely at right angles across base of third segment, and not forming an angular prominence on lower half ..... *similis* Mall.

Females

1. Fifth abdominal tergum obtusely rounded and swollen at apex, curved ventrad, armed with a loose tuftlike series of bristles; opening to ovipositor situated on ventral surface of abdomen and basad of apex. *parkeri* Mall.

Fifth abdominal tergum not rounded nor swollen on caudal region, armed with a transverse series of marginal bristles; opening to ovipositor situated at apex of abdomen 2

2. Mid and hind femora reddish yellow ..... *cylindrica* (Stein)

Mid and hind femora largely blackish 3

3. Hind tibia with 3 or 4 anterodorsal and 3 or 4 posterodorsal bristles; hind tibia largely reddish yellow 4

Hind tibia with fewer bristles on one or other of dorsal surfaces, usually with 2 anterodorsal and 2 posterodorsal bristles; hind tibia largely blackish tinged 5

4. Costal setulæ robust and in a prominent series distad and proximad of costal thorn, longest setulæ about equal in length to humeral cross vein and most of the setulæ nearly twice as long as width of costa. *setosa* (Stein)

Costal setulæ weak, inconspicuous, scarcely longer than width of costa. *conscripta* n. sp.

5. Inner margin of second antennal segment extending obliquely across base of third segment and angularly projected on lower half; costal setulæ scarcely longer than width of costa ..... *fuscipes* Mall.

Inner margin of second antennal segment extending transversely at right angles across base of third segment, and not forming an angular prominence on lower half; costal setulæ longer than width of costa. *similis* Mall.

Eremomyioides parkeri Malloch

Eremomyioides parkeri Malloch, 1918, Proc. Biol. Soc. Wash., 31: 67. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.

Eremomyoides parkeri Malloch, 1921, Can. Ent., 53: 76 Strickland, 1938, Can. Jour. Res., Sect. D, 16: 209.

The male resembles *setosa,* having eyes widely separated and frons bristled to vertex. It may be distinguished from the latter species by the bristles on proximal half of antero- and posteroventral surfaces of hind femur, which are coarser and stouter and are directed apicad. The male has a stout apical bristle on anterior surface of hind tibia, but the bristle at middle of anterior surface is very weak in the specimens before me, as is also the lower posthumeral bristle. The fore femora lack the usual series of longish setulæ on median plane of anterior surface.

Alberta: ♂, Medicine Hat, April 2, 1926 (F. S. Carr), allotype [C.N.C.]. ♀, Elk Island, May 16, 1937 (E. H. Strickland) [Univ. Alberta]. ♀, Calgary, May 1, 1939 (W. S. McLeod).

Saskatchewan: ♂, Oxbow, May 11, 1907 (Fredk. Knab) [U.S.N.M.]. ♀, Ogema, June 16, 1916 (N. Criddle) [C.N.C.].

Eremomyioides setosa (Stein)

Pegomyia setosa Stein, 1898, Berl. Ent. Zeitschr., (1897) 42, heft 3 & 4, p. 247. Aldrich, 1905, Misc. Coll. Smithsn. Inst., 46: 558.

Eremomyioides setosa Malloch, 1918, Proc. Biol. Soc. Wash., 31: 67.

Eremomyia setosa Stein, 1919, Arch. f. Naturgesch., (1917) 83, Abt. A, heft 1, p. 153. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.

Eremomyoides setosa Malloch, 1921, Can. Ent., 53: 76, 77.

In both *setosa* and *parkeri* the hypopygium is much larger than in other species belonging to the genus. The female of *setosa* has all femora largely blackish, costal setulæ robust, and hind tibiæ armed with 3 or 4 anterodorsal and 3 or 4 posterodorsal bristles.

Alaska: 2 ♂, Katmai, June, 1917 (J. S. Hine).

Idaho: ♀, Moscow, cotype [Chicago Nat. Hist. Mus.].* ♀, Juliaetta, May 11, 1902 [N.S.N.M.].

* Formerly the Field Museum of Natural History.

Oregon: ♂, ♀, Meacham, May 8, 1927, 3680 ft. alt. (H. A. Scullen) [Ore. State Coll.].

Washington: ♀, Davenport, April 4, 1935 (J. Wilcox).

Eremomyioides cylindrica (Stein)

Eremomyia cylindrica Stein, 1898, Berl. Ent. Zeitschr., (1897) 42, heft 3 & 4, p. 226. Aldrich, 1905, Misc. Coll. Smithsn. Inst., 46: 554. Smith, 1910, Ann. Rept. N. J. State Museum 1909, p. 791. Johnson, 1913, Bull. Amer. Mus. Nat. Hist., 32, Art. 3, p. 78. Stein, 1919, Arch. f. Naturgesch., (1917) 83, Abt. A, heft 1, p. 153. Stein, 1920, Arch. f. Naturgesch., (1918) 84, Abt. A, heft 9, p. 73, 74.

Eremomyioides cylindrica Malloch, 1918, Proc. Biol. Soc. Wash., 31: 67. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.

Eremomyoides cylindrica Malloch, 1921, Can. Ent., 53: 76. Huckett, 1924, N. Y. (Cornell) Agr. Exp. Sta., Mem. 77 (1923), p. 12. Johnson, 1925, Occas. Pap. Boston Soc. Nat. Hist., 7: 233. Johnson, 1925, Proc. Boston Soc. Nat. Hist., 38: 93. Leonard, 1928, N. Y. (Cornell) Agr. Exp. Sta., Mem. 101 (1926), p. 837. Strickland, 1938, Can. Jour. Res., Sect. D, 16: 209.

The male of *cylindrica* may invariably be distinguished by the combination of characters given in the key. In this sex the second antennal segment and tibiæ range in color from yellowish or reddish to blackish. In the female the middle and hind femora and all tibiæ are reddish yellow, and the costal setulæ, like those of the male, are short and arranged in an inconspicuous series.

Alberta: ♀, Wabamun, April 24, 1939, ♂, Edmonton, May 1, 1937, 3 ♀, Fawcett, May 8, 1934 (E. H. Strickland).

Massachusetts: ♂, New Bedford, April 29, 1896 (Hough), cotype [Chicago Nat. Hist. Mus.]. ♀, Wellesley, May 15, 1919 (J. D. Tothill).

Michigan: 2 ♀, Ann Arbor, May 18, 1923 (J. S. Hine) [Ohio State Mus.].

Minnesota: ♀, St. Anthony Park (Lugger), cotype [Chicago Nat. Hist. Mus.].

New York: ♂, Ithaca, May 15, 1914 [C.U.]. ♂, Patterson, April 24, 1935, ♀, Brewster, April 30, 1936 (H. Dietrich) [C.U.]. ♂, ♀, Riverhead, Long Island, May 8, 1927.

Ohio: ♂, West Liberty, April 12, 1931 (R. B. Gordon). ♀, Neotoma, Hocking County, March 28, 1932 (E. S. Thomas) [Ohio State Mus.].

Ontario: ♂, Strathroy, April 22, 1927 (H. F. Hudson). ♀, Low Bush, Lake Abitibi, June 8, 1925 (N. K. Bigelow) [C.N.C.]. ♀, Jordan, June 18, 1926 (G. S. Walley). ♀, Fenelm Falls, May 27, 1927 (F. P. Ide).

Pennsylvania: ♀, Broomall, May 6, 1934 [Brigham Young Univ.].

Quebec: ♀, Aylmer, May 14, 1925 (G. S. Walley). ♀, Hull, May 12, 1925 (C. H. Curran) [C.N.C.].

Eremomyioides conscripta new species

MALE, blackish, resembling *fuscipes* in habitus, second antennal segment reddish along distal margin, parafacial pruinescence brownish, mesonotum subshining, with a dorsocentral stripe and trace of sublaterals caudad of transverse suture, abdomen grayish white pruinescent, dorsocentral vitta gradually becoming broader caudad, legs blackish, hind tibiæ with trace of reddish tinge, calyptræ whitish, halteres purplish tinged.

Eyes separated by about width of third antennal segment, inner margin of second antennal segment squarely transverse across base of third segment, two pairs of presutural acrostical bristles, apical bristles of processes of fifth abdominal sternum fine and slender, costal setulæ not longer than width of costa, inconspicuous; fore tibia with 2 posteroventral bristles, mid tibia with 1 anteroventral, 1 anterior, 1 anterodorsal, 1 posterodorsal, 3 posterior bristles, hind tibia with 2 or 3 anteroventral, 4 anterodorsal and 4 posterodorsal bristles, 1 or 2 median anterior bristles, apical anterior bristle well developed. Length 8 mm.

FEMALE, as male, second antennal segment more broadly reddish, abdominal stripe less distinct, cross veins slightly infuscated, hind tibiæ largely reddish, costal setulæ fine, slightly longer than width of costa, tibiæ bristled as in male, fore tarsal segments 2, 3, 4 and 5 narrowly broadened, when compared to those of mid tarsus, fourth fore tarsal segment fully twice as long as wide. Length 7.5 mm.

Holotype and allotype: ♂, ♀, Copper Mountain, British Columbia, April 8, 1928, *Betula occidentalis* sap (G. Stace Smith) [C.N.C.].

The species *conscripta* comes closest to *fuscipes* and *similis*, from both of which it may usually be distinguished by the greater number of bristles on hind tibia. In *conscripta* the costal setulæ are weak, the inner margin of second antennal segment does not

proceed obliquely across base of third segment, and there are only two pairs of presutural acrostical bristles. The female of *conscripta* has paler hind tibiæ than in *fuscipes* and *similis,* and the costal setulæ are much weaker than those of *setosa.*

Eremomyioides fuscipes Malloch

Eremomyioides fuscipes Malloch, 1920, Trans. Amer. Ent. Soc., 46: 182. Frison, 1927, Bull. Ill. Nat. Hist. Surv., 16, Art. 4, p. 198. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.

Eremomyoides fuscipes Malloch, 1921, Can. Ent., 53: 76. Huckett, 1924, N. Y. (Cornell) Agr. Exp. Sta., Mem. 77 (1923), p. 12. Leonard, 1928, N. Y. (Cornell) Agr. Exp. Sta., Mem. 101 (1926), p. 837.

The speces *fuscipes* and *similis* are closely allied, both having the tibiæ largely blackish in both sexes. However the hind tibiæ, and to a less extent the middle tibiæ, do exhibit a more or less obscure reddish tinge in certain specimens. In *fuscipes* the hind tibia may, or as is more general, may not have a bristle at middle of anterior surface. The costal setulæ in both sexes are weak, and the inner distal margin of second antennal segment is oblique in its course across base of third segment, thereby forming an angular prominence or outline on lower half. In *similis* the costal setulæ are longer than width of costa, and inner margin of second antennal segment is more nearly rectangular across base of third segment.

Alberta: ♂, Edmonton, May 13, 1937 (E. H. Strickland).

Connecticut: ♂, South Meriden, March 15, 1915 (H. L. Johnson).

Georgia: ♀, Clayton, April 15–22, 1940 (H. C. Huckett).

Illinois: ♂, Urbana, March 18, 1918 (Frison and Malloch), paratype [Ill. Nat. Hist. Surv.].

New York: ♂, Ithaca, March 25, 1917 (R. C. Shannon). ♂, Fall Creek, Ithaca, April 24, 1922 (L. S. West). ♂, Cooper Cemetery, Staten Island, March 17, 1918.

Ohio: ♀, Columbus, March 27, 1907.

Pennsylvania: 2 ♂, Hawley, April 20, 1936 (H. Dietrich).

South Carolina: ♀, Clemson College, February 22, 1936 (D. Dunavan).

Eremomyioides similis Malloch

Eremomyioides similis Malloch, 1920, Trans. Amer. Ent. Soc., 46: 183. Frison, 1927, Bull. Ill. Nat. Hist. Surv., 16, Art. 4, p. 198. Séguy, 1937, Gen. Insect., Fasc. 205, p. 122.
Eremomyoides similis Malloch, 1921, Can. Ent., 53: 76, 77.

The distinguishing characters and relationships of this species have already been discussed in notes concerning *conscripta* and *fuscipes*. The species has in error been recorded by me as occurring in New York from specimens which I now regard as belonging to *fuscipes*.

Alberta: ♂, Edmonton, May 13, 1937 (E. H. Strickland).

Colorado: ♂, Campus, University of Colorado (Cockerell) [N.S.N.M.].

Illinois: ♀, Tuscola, March 29, 1918, paratype [C.N.C.]. ♂, Urbana, Brownfield Woods, April 23, 1919, paratype [Ill. Nat. His. Surv.].

South Dakota: ♂, Brookings, April 29, 1919 [Ohio State Mus.].

Wisconsin: ♂, Dane County, April 10, 1900 (F. M. Snyder).